MARINE REVIEW.

VOL. III. CLEVELAND, OHIO, THURSDAY, FEBRUARY 26, 1891. No. 9.

Government Work Will Give Some Help to Ship Yards.

A marked reduction in the working forces of the shipyards may be expected with the opening of navigation. By July 1, all new ships now under way will be fully completed over the entire chain of lakes, with the possible exception of work at the plant of the American Steel Barge Company. Little new work is expected in either iron or wood, even the package freight companies having given up all talk of replacing wooden propellers with modern steel freighters. The officers of one of the successful iron mining companies now owning no boats, had considered a proposition to use part of its surplus and, in addition, issue bonds for the construction of new steel boats, after the plan followed by the Cleveland Iron Mining Company—that of securing the bonds by a mortgage on the mining property—but it is thought that this project has also been abandoned, on account of the prospects of low rates from the fleet of general freight carriers.

With the passage of the sundry civil appropriation bill, however, the government engineers will have some work to offer to the builders. The bill provides for three light-ships to be stationed on Gray's reef, White shoal and Simmon's reef, in the Straits. These boats will be built at a cost not to exceed $20,000 each, and as part of this limit of $20,000 will be needed for machinery that will enable the boats to take care of themselves, the hulls will probably be of wood. It is also the aim of the vessel owners to secure three more light-ships for the shoals in the Green bay entrance to Escanaba but these are not assured as yet. Another provision of the bill, and one which will very probably carry, is an appropriation of $90,000 for a steamer to replace the revenue cutter, Andy Johnson, on Lake Michigan. For a steam boarding vessel to be stationed at Chicago, $28,000 is provided. In all, these appropriations represent $238,000 worth of shipyard work. As regards the appropriation for light-ships for the Green bay entrance, $60,000, there is some doubt but the other work may be fully expected.

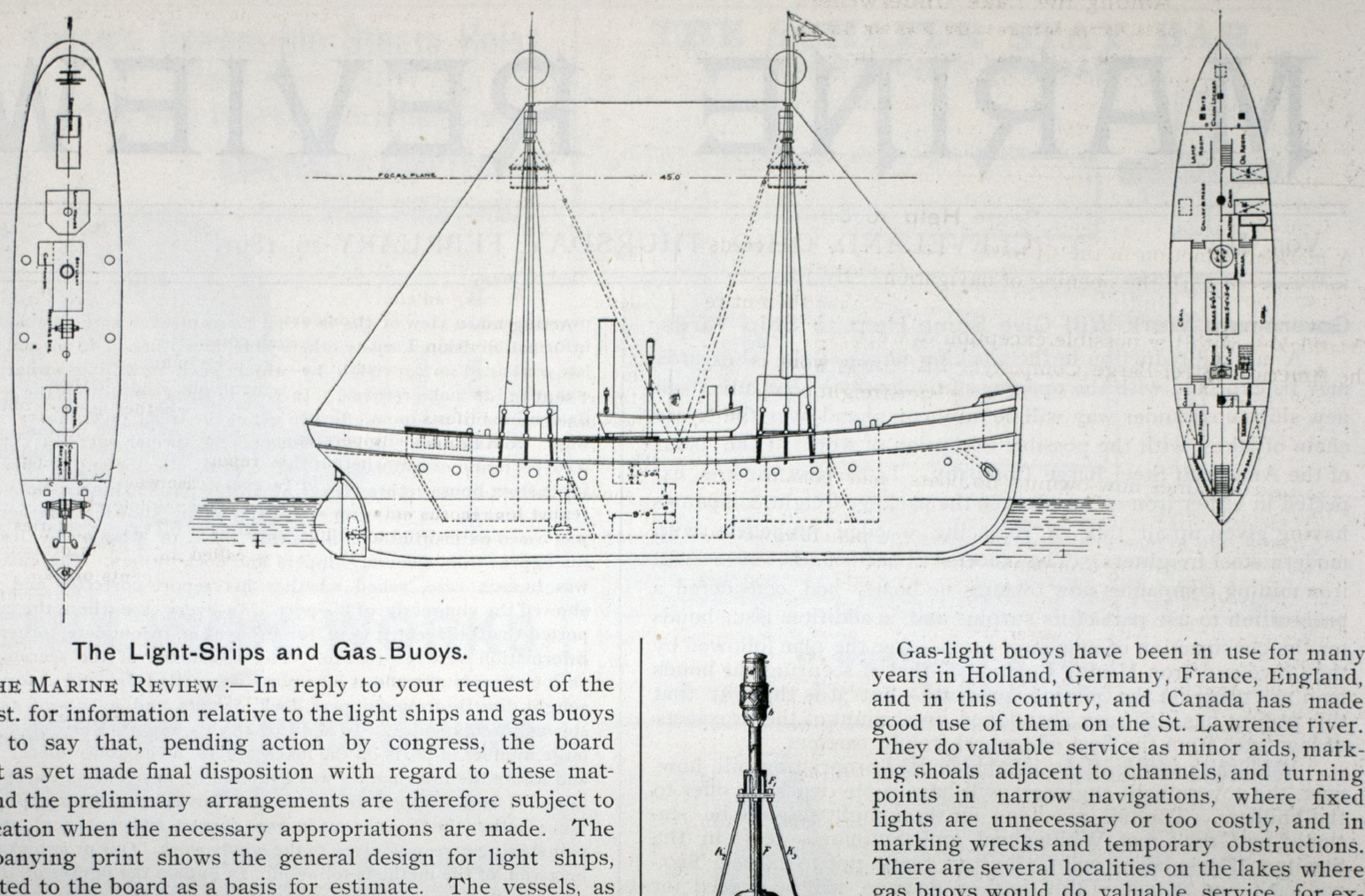
Mr. C. H. Keep Defends the Lake Census.

EDITOR OF MARINE REVIEW:—In the issue of the REVIEW for Feb. 12, 1891, there is an article headed "Little faith in census figures on lake commerce," in which an injustice is done by the writer to the census office, which calls for a reply. A reader of the article in question would certainly reach the conclusion that the census authorities had recently issued a bulletin giving data with regard to the transportation of freight on the great lakes during the season of 1889; that the writer of the article had examined the bulletin in question, and concluded that the figures contained therein were untrustworthy, and that the opinion of the writer in this respect was shared by "certain well known vessel owners and iron ore shippers," who had likewise seen and studied the bulletin referred to. As the compilation of the figures referred to in this article was made by me, I should be likely to receive the published report of the census office concerning them as soon as any one. I have seen no bulletin from the census office on the subject, and on the day before I received the copy of the MARINE REVIEW containing this article, I received a letter from the chief of division of the census office, having the subject of transportation in charge, stating that no such bulletin had been issued by the office. It is evident, therefore, that the writer of the article in question has criticized the work of he census office in advance of its publication, and that the only information he has on the subject is that derived from certain fragmentary figures which have appeared within the past fortnight in the press dispatches. The writer of the article has assumed that the figures compiled by the census office were, for the most part, derived from custom house returns. This assumption is entirely rroneous. The writer in the REVIEW thinks that the census office might have obtained correct information as to the cargo carried on the lakes, by applying directly to the vessel owners. This was the original plan of the census office. It was abandoned only by reason of the strenuous opposition of vessel owners, and in view of the fact that many owners were unable to give the information desired, many others were unwilling to do so, and the census law contained no provision by which such unwilling owners could be compelled to make returns. In view of these conditions the census office determined to make an effort to get at the traffic on the lakes in another way. Acting under the directions of the special agent in charge of the transportation division, I sent out to each collector on the lakes, a request for custom house returns covering all the ports in his district. With each report sent in, the collector sent a statement showing whether his report was based on manifests on file at his office, or whether he had obtained his figures from owners, shippers and dock owners. The customs officer was, in each case, asked whether his report correctly and completely showed the commerce of his port. In every case where the collector reported that his records were, for any reason, incomplete, other sources of information were resorted to. The assistance of the secretaries of the various boards of trade at lake ports was called in, and information was sought directly from shippers, dock owners and agents of railroad and steamship companies. In addition to this, reports were obtained from a large number of ports on the lakes where no customs officer is located, and where the information was gathered by an agent on the spot, who obtained it from shippers and receivers. Various tests were applied to ascertain whether the figures sent in were correct and consistent, and the most painstaking care was given to the whole work. One or two examples may be given, of the methods followed: I" Buffalo the figures of the collector of customs were considered accurate and complete so far as they covered the ground. On westbound freight, however, the collector's office furnished figures only for coal, salt, cement and railroad iron, and no return was made for the immense quantity of package freight sent west from Buffalo. To remedy this defect, application was made to each of the steamship companies carrying this character of freight. Each company furnished a statement of the amount of merchandise, other than the four articles above mentioned, carried by its vessels out of Buffalo. The aggregate of this package freight was then added to the collector's figures, and the result accepted as correct for the port of Buffalo. So in the case of the shipments and receipts of iron ore. The first returns received from the collectors of customs showed a considerable amount of iron ore shipped at the shipping ports which was not accounted for at the receiving ports. The receipts at the various ore receiving ports were, therefore, closely investigated, and a considerable number of errors in the custom house figures detected. The result after the final correction of the iron ore figures makes the total receipts of iron ore at the various receiving ports, twenty one in number, to be within one-half of one per cent. of the total shipments at the shipping ports. It is impossible to give an account of the various devices used to test the correctness of the figures of the various articles of traffic. The custom house figures were rejected in an immense number of cases. In many cases they were rejected by the custom house officers themselves, and the returns sent in to me from the custom house officers were based on information collected by those officers from receivers and shippers.

The writer of the article in the REVIEW speaks of the figures as nothing more than estimates. There are no estimates whatever in the figures given. All are based on actual returns made up, in some cases, from custom house records where those records are believed to represent the traffic correctly, and, in a large majority of instances made up from returns carefully collected from other trustworthy sources. When these figures were sent to the census office for publication a detailed account of the method in which they were compiled was sent with them, with the request that the publication of the figures should be accompanied by the publication of the methods used in getting them. Whether the census office will comply with this request I do not know. In view of the foregoing facts, I merely ask the REVIEW, as a matter of justice to the census office, to withhold its criticisms and reserve its judgment until it has seen the census bulletin. The bulletin is issued for the purpose of inviting criticism and correction before its contents are incorporated in the final report of the superintendent of the census. The vessel owners and iron ore men referred to in the REVIEW article will then have an opportunity to point out the errors which they have discovered without seeing the figures.

C. H. KEEP.

[Comment on this communication, see page 7.]



The Light-Ships and Gas Buoys.

THE MARINE REVIEW:—In reply to your request of the 21st inst. for information relative to the light ships and gas buoys I beg to say that, pending action by congress, the board has not as yet made final disposition with regard to these matters, and the preliminary arrangements are therefore subject to modification when the necessary appropriations are made. The accompanying print shows the general design for light ships, submitted to the board as a basis for estimate. The vessels, as proposed, are 100 feet long over all, 20 feet wide, and 14 feet deep, drawing 9 feet of water with 5 feet of freeboard. They are furnished with propelling power, having a marine boiler 5½ feet by 9 feet, a cylinder, say 14 x 16 in., and a 5 or 5½ foot wheel. They will thus be able to proceed direct to their stations in the spring and return to harbor in the fall, remaining out as long as there is any occasion for their service, and taking off the keepers of the isolated stations who now have to get away while they can, often before the latest vessels are past. In case of a particularly violent tempest, the machinery can relieve the strain on the moorings, and in urgent cases of need or disaster in the vicinity, the light vessels can do duty as life saving stations.

An auxiliary boiler and steam hoist will be furnished, to heat the vessel, keep the main boiler hot, and hoist the lights or run a dynamo as may be determined. The lights will be on one or both masts, at an elevation of 45 feet above the lake and will be visible in clear weather for 10 or 15 miles. The steam fog-whistle will be 10 inch, the same as used on the shore stations. For moorings, heavy anchors or a 10-ton casting will be set on the reef with a range of extra heavy steel cable attached. To this, following the device of Commander Ludlow for anchoring buoys on the Pacific coast, it is proposed to connect a double wire rope mooring, one right and one left-hand twist, securely seized together at short intervals. This makes a light and powerful mooring. In leaving station, the light ship will hoist in the wire cable, unshackle it from the steel range, and buoy the end for recovery in the spring, without disturbing the heavy casting.

The ships, as proposed, are strongly built of oak as being, for vessels of these dimensions, cheaper and stiffer than metal. A steel sheathing, say 4 feet wide along the water line, will protect them from ice, and with care they will be good for 20 years. The coal bunkers will hold 30 to 40 tons, which, as the average annual consumption by a steam fog-signal is 18 tons, will be an ample supply for service and movement. The cost of each complete, exclusive of the special light-house equipment, will be about $15,000, and including the illuminating apparatus and a season's supply of stores on board, about $2,500 in addition. If built of metal, the cost would be about 25 or 30 per cent. more. The crew will consist of four men—a keeper capable of running the machinery, an assistant keeper, and two hands. The vessels can rendezvous for the winter at Beaver island. Harbor Springs, Scammon's harbor, or Cheboygan, and refit for the next season.

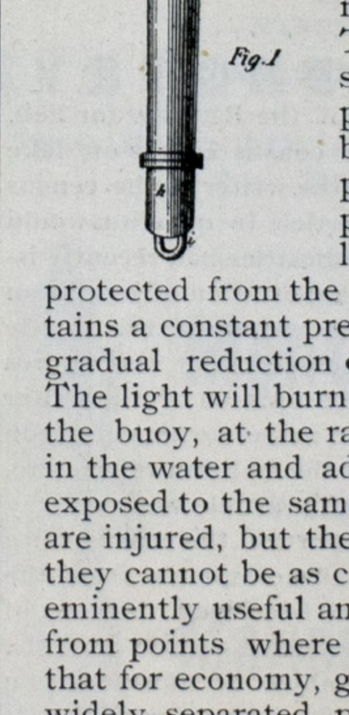


Fig. 1

Gas-light buoys have been in use for many years in Holland, Germany, France, England, and in this country, and Canada has made good use of them on the St. Lawrence river. They do valuable service as minor aids, marking shoals adjacent to channels, and turning points in narrow navigations, where fixed lights are unnecessary or too costly, and in marking wrecks and temporary obstructions. There are several localities on the lakes where gas buoys would do valuable service, for example, at some points in the Detroit, St. Clair and St. Mary's river, the shoals adjacent to the track of vessels at the lower end of Lake Huron, numerous reefs in the vicinity of the Straits, such as the Graham shoals, the shoals south of Fox Island, Drisco and Whale's Back in Green bay, and several lying in or near the track of vessels through the Green bay passages. The shape of the buoy is not material so long as it is properly adapted to the locality where it is to be used. The form now in use for the ordinary can buoy is good. To stand the necessary compression, the gas should be specially prepared, preferably from petroleum, and is stored in the body of the buoy from a reservoir on the tender; compressed to 5 or 6 atmospheres, say 75 to 90 lbs. pressure. A pipe leads from the buoy to a lantern 6 to 8 feet above the water, properly protected from the wind and sea. An automatic regulator maintains a constant pressure of gas at the burner, compensating the gradual reduction of pressure in the buoy as the gas is used. The light will burn for 30 to 120 days, according to the size of the buoy, at the rate of 16 or 17 cubic feet in 24 hours. Being in the water and adjacent to the track of vessels, gas buoys are exposed to the same accidents as others, and occasionally fail or are injured, but the Canadian experience has been that while they cannot be as certainly relied upon as a shore light, they are eminently useful and the navigators would be loath to lose them from points where they have been established. It is evident that for economy, gas buoys should be established, not at a few widely separated points, but in localities where several are required and where the same apparatus for procuring and delivering the gas can be used for all. It is also evident that for such localities as Gray's reef, White shoal and Simmon's reef, the power and range of the gas buoys are quite inadequate to the needs of navigation. With the numerous minor points to be marked in and near the straits of Mackinac, it will no doubt be found advisable, if gas buoys are to be used, to establish at some conveniently central point, a small plant for the manufacture, etc., of the gas, and the service of a small tender to look after them. The expense of this service will prove to be more than compensated by the reduced risks and losses.

WILLIAM LUDLOW.

Among the Lake Underwriters.

Special Correspondence to the MARINE REVIEW.

BUFFALO, N Y., Feb. 26.—It transpires that the old, staunch and popular Etna company has not withdrawn from the lake marine business. O. T. Flint, of this port, who had been the general superintendent for its inland department since 1881, informed your correspondent that the Etna practically had retired from the lake field; that its Chicago general agent might do a little in the cargo line, and its New York harbor business would be kept up. It may be that at that time Mr. Flint actually believed it would attempt no lake business of consequence; all the other underwriters, who are generally well posted on such matters, certainly understood its intention to be such. Now it is said that this powerful company's main object was to simplify its lake business and reduce the cost of its handling, and therefore the Buffalo office has been dropped. On the outside it is conceded generally that Mr. Flint has done well for the company; what the feeling is on the inside cannot now be told. One thing seems clear. The Etna cannot keep up with the other big marine companies without having some sort of agency in Buffalo. This port virtually is the headquarters of the hull (no pun) business.

At last a meeting of the Inland Lloyds has been called. The annual session is generally held about the end of January. It is expected that the representatives of all the interested companies will be here today (Thursday), to discuss the outlook for the ensuing season. The main object, however, is to provide means for the publication of the vessel register, so necessary as a guide book in their risky business. The Mercantile, of Cleveland, having drawn out, a reapportionment of the expense is necessary. The register, however, already is well under way, Manager McLeod having been working on anticipation to some extent. Little has been said thus far as to hull rates, and very likely the meeting will take no definite action thereon. It is understood that no changes of moment will be made in any event from last season's rates. It would be wise, however, for these gentlemen to consider the advisability of making better rates for the staunch and powerful steel steamers turned out the past few years. The losses on that class were quite small last season as compared with the premiums. At least two of the general agents have confessed to your correspondent that such vessels are entitled to lower figures than have been exacted here, but they dared not reduce the rates for fear of the kicking by owners of hulls not so desirable which would have to be charged more in consequence. This may be good policy—for a time—but it's poor argument. Every tub should stand on its own bottom. If the home underwriters will not do the fair thing for the owners of these fine risks, they have only themselves to blame if the business is placed in foreign companies.

The Lackawanna Company has gobbled up another slice of Buffalo. It is on the line with the slices heretofore acquired, and consequently will come useful. They have bought nearly the entire block bounded by Main, Ohio and Washington street and the dock, directly across the street from their big freight sheds. It was intended years ago to build a large grain elevator on that ground. The Lackawanna tracks run along-side on Ohio street, and there is enough dock frontage for unloading the biggest steamers. It would consequently be a most convenient site for the elevator which that company soon must own.

Last week an interesting experiment was made with the canal steamer G. W. Dimmers. She was fired up with crude petroleum, instead of coal, by using a new apparatus invented by W. M. Jennings. Steam was kept up to 80 pounds without trouble. The test was satisfactory in every respect. Mr. Jennings claims he can run a steamer to New York with 12 barrels of oil, at a cost of say $15 to $18. All of our canal steamers have been using soft coal, costing from $50 to $75 for the down trip. If Mr. Jennings' apparatus holds out, owners can effect a saving of about $100 on the round trip, which is equal to about 1¼ cents freight. This would put the canal route way below the reach of competition by rail.

Lake Marine Exhibit at the World's Fair.

Special Correspondence to the MARINE REVIEW.

CHICAGO, Ill., Feb. 26.—The signs of the times according to the statement of both vessel owners and captains are not auspicious for the carrying trade of the lakes for the season of 1891. Big and little vessel men are a unit seemingly in this regard. A prominent vessel owner summed up the situation in this language. "The craze for building great freight steamers that originared four years ago and spread all along the lake coast is bringing its legitimate result—a paralysis of marine traffic. Slowly but none the less surely they are driving the smaller craft from lake waters. Navigation will open up early in my opinion, lumber will doubtless be hauled in vast quantities but the regular liners and railroad boats will do most of the handling. Corn freights are the subject of much discussion, but no one can even approximate the carrying trade in this cereal at this time, as it won't grade, largely owing to the weather influences. Capt. Ira H. Owen left Chicago, Tuesday night, for Peninsula, Florida, whither he has gone on a pleasure trip. His competent representative spoke for him however on the general situation. "The season will open early," he said, "but it is yet too early to predict what the outlook for the season of 1891 will be. But everything points to a light season." Very little repairs have been made in Chicago this winter. The grain in storage here is unusually small. The shut down of various steel and iron concerns has made the freightage of ore uncertain and unreliable.

The proposed lake marine exhibit at the World's Columbian Exposition is attracting attention and congress will be petitioned to appropriate the sum of $50,000 for that purpose. The idea of an inland marine exhibit first originated with Mrs. A. C. Meyers, a World's Fair alternate. Her ideas have met with approval among all the marine interests and especially by the Excelsior Marine Benevolent Association, who at a lodge meeting held at Excelsior hall, Monday afternoon, not only fully endorsed her course, but by unanimous consent of the association placed in her hands an official letter to lay before congress Mrs. Meyers started for Washington, Wednesday afternoon, where she will remain until some decisive action is taken favorable or otherwise. The E. M. B. A. is becoming a power among sea-faring men and scarcely a day passes but what some one makes formal application for membership. Appointments for the Lake Michigan and Lake Superior Transportation Company are as follows: Steamer Peerless, Capt. H. C. Page, Engineer, William Conly; City of Duluth, Capt. Donald McLean, Engineer, Henry Chalk; City of Traverse, Capt. J. M. Twitchell, Engineer, S. W. Armstrong; Jay Gould, Capt. Joseph White, Engineer, A. P. Williams.

Passenger Boats in Demand.

Special Correspondence to the MARINE REVIEW.

WEST BAY CITY, Mich., Feb. 26 —The steamer Soo City owned by the Delta Transportation Company, and built by F. W. Wheeler & Co., which has been on the route between Cheboygan and Sault Ste. Marie ever since she went into commission, will ply between Chicago and Mackinaw this year. The Soo City is now at Wheeler & Co.'s yard and will be thoroughly overhauled before going out this spring. The steamer Metropolis, of the Shore line, is being rebuilt at Wheeler & Co.'s. Her entire decks have been taken out and with a single exception, all of the deck beams. New paddle boxes will also be put in. The hull will be strengthened and steel arches put in. It is reported that the City of Mackinaw, built by Wheeler & Co., and running into New York, can carry more freight than any other boat of its size on the Atlantic ocean and that she has served to open the eyes of some of the old shipbuilders on the seaboard, who thought it impossible to build a successful ocean steamer on the great lakes. The Flint & Pere Marquette Railroad is making a survey for a bridge across the Saginaw river for its belt line. Capt. J. H. Graham, of the firm of Graham & Morton, owners of the City of Chicago, was in the city last week. "I am highly pleased with the work of lengthening the Chicago," he said. "It was a great undertaking and the manner in which it has been done reflects great credit on Wheeler & Co." Graham & Morton had two boats in the excursion business on the route between Benton Harbor and Chicago. It was reported last summer that they would have a new passenger steamer built thi year, which, in point of elegance, would eclipse anything now on the lakes. 'We are going to lease or purchase another boat to run on the route this year," said Capt. Graham, "but have no intention of building. If business is good during the summer we may let a contract in August for a new boat, but the matter is entirely undecided at present."

Duluth parties have been in the city the past week looking after a small steamer to put on a passenger route there. They found that the propeller building for R. Armstrong's "Boy Line" was just what they wanted, but the owners wanted $11,000 for her when completed, which was $2,000 more than the parties were willing to pay. They left for lower lake ports to try and find something more suitable to their ideas of price, but may return as they were very favorably impressed with the Armstrong boat. Parties from the west are here looking after a boat similar to the Detroit ferries. Price, they say, is no object, if they secure the right kind of a boat.

The second meeting of the Saginaw valley Vessel Owners' Association was held last week and was well attended. A preamble setting forth the objects of the association was signed by a number of those present and letters were read from owners and agents all around the lakes approving the course the association proposes to take in regard to the carrying of lumber. The longshoremen's union has, as yet, taken no action on the stand taken by the vessel owners. "We are not troubling ourselves very much about it," said the president of the organization. "All of the owners have not signed the agreement, and unless they all sign those who have already joined will be compelled to withdraw. Then, too, the mill men are with us and we believe that the old rule regarding the loading of lumber will go into force at the opening of navigation."

At their meeting last week the marine engineers were given a surprise while in regular session. About fifty wives of the member called at the hall, carrying baskets of refreshments, laden down with intentions of breaking up the business. They succeeded to perfection and the remainder of the evening was pleasantly spent. Joseph Blanchett, for several years engineer of the Shore line steamer Arundell, has been appointed chief engineer of the the steamship Fedora for the coming season.

Where the Gas Buoys will be Located.

The sundry civil appropriarion bill contains a provision for fifteen gas buoys, to cost $2,000 each. Congressman Burton has the assurance of the officers of the light-house board that five of these buoys will be given to the lakes. They will in all probability be ready for service during the coming season and if their distribution will be in accordance with the plans of the vessel owners they will be located as follows: Ballard's reef, Detroit river, between Limekiln's and Grosse Isle ranges; one each on Harlem and Corsica shoals, lower end of Lake Huron; Graham's shoal, near old Mackinaw, to replace bell buoy, which generally rings only when it is not wanted; Poe's reef, abreast of Cheboygan. It was at first thought that it would be well to place one of the buoys on Vienna shoal, but since Col. Ludlow blasted the rock at this point a year ago last summer it has been a much less dangerous locality and, with light ships on Gray's reef and on White shoal, in addition to the Waugoshance light, a buoy on Vienna shoal will hardly be necessary.

The Proposed Hancock-Houghton Bridge.

In accordance with the request from the citizens of Hancock and Houghton, the two Michigan towns of copper fame on opposite sides of Portage lake, congress last week passed a bill authorizing the construction of the proposed free bridge across the lake. The citizens of the county in which the two towns are located will at the next general election vote on a proposition to issue bonds for the building of a bridge. When the second bridge was proposed—there is already a bridge over the lake, owned by a private corporation–the vessel interests were opposed to it, not on account of the bridge itself hindering navigation, but because the intended location of the bridge made it dangerous for vessels to approach the coal and ore docks at Hancock. The bill, however, has a clause which provides that the plans of the bridge shall be approved by the secretary of war and that he shall designate the location of it. With this much understood, the congressional representatives of other large cities allowed the measure to pass, but the investigations of the army engineers who are to decide upon the location of the bridge will be watched with interest. The MARINE REVIEW a short time ago presented a drawing showing the proposed site of the bridge, about 1000 feet east of the present structure. If this location is insisted upon it is very probable that the citizens will meet with objection from the army engineers as a bridge at the point in question would be a decided hindrance to navigation.

The Etna Still in Business on the Lakes.

The report from Buffalo that the Etna Insurance Company had decided to quit business on the lakes was founded only on a change in management of the inland department. Mr. O. T. Flint, of Buffalo, was retired and through this the story of the company's suspension of lake business was started. W. B. Scott & Son, Cleveland agents of the Etna, who had been advised of the change in management but knew nothing of a suspension of business, immediately wired President Goodnow, of Hartford, Conn., and received an answer telling them to make an emphatic denial of the rumor. The Etna is among the best companies engaged in the lake business and will hereafter have two branch offices, one in New York and the western department in Chicago.

75 Cents—Bind the Marine Review—75 Cents.

"This paper is too valuable to lose. I want to refer to those statistics" said the financier. "Those illustrations are worth preserving" added the man with an eye for the beautiful. "The list of appointments of masters and engineers come very handy" says the advertiser.

Therefore the MARINE REVIEW has purchased a number of Emerson binders which will be furnished to subscribers at cost price, 75 cents, postage paid.

Lights on Rafts.

A circular containing regulations with regard to lights on small craft, adopted by the supervising inspectors of steam vessels at their recent meeting in Washington has just been issued by Gen. Dumont. The regulation provides that log or boom rafts navigating or anchored in the fair-way of any bay, harbor or river shall carry a white light at least 12 feet high at each end of the raft, and one of such lights on each side midway between the forward and after end. Rafts of one crib or not more than two in length shall carry one bright white light on a pole not less than 12 feet high; three or more cribs in length, shall carry one white light at each end of the raft at the same height.

Boom rafts are towed through the Sault river and the foregoing regulations will apply to them, but there are no crib rafts on the lakes. How any of these rules will be made to apply to the log rafts of the lakes is a question.

Canal Rules Must be Respected.

It would seem as though the government authorities are determined in their effort to have the St. Clair canal rules respected. Gen. Poe certainly has the authority to make rules for the canal under the direction of the secretary of war. The fining of Capt. Alva H. Reed, of the steamship Alex. Nimick, in the federal court at Detroit last week is in accordance with the strict policy decided upon. The Nimick passed the little steam scow Harry Cottrell towing two vessels and going in the same direction as the big steam barge. There are other cases yet to come up for hearing.

Loss of the Norton Life Boat.

Several weeks ago the MARINE REVIEW noted the departure of the steam yacht Francis L. Norton from New London for Toulon, France, and published an engraving of the odd little life boat. It is now a few days more than three months since the little yacht started on the voyage across the Atlantic and, as nothing reliable has been heard of her, it is more than probable that she has been lost with all on board. Capt. Norton, the inventor, claimed that on account of the water ballast system used it was impossible to capsize or sink the boat. Capt. Norton with his wife and daughter and a crew of eight were aboard the little craft.

The Sault Water Power Project.

The citizens of Sault Ste. Marie who bonded the town for $500,000 to help the water power project are still expecting English capitalists to take hold of the enterprise. They have had encouraging letters of late from W. H. Seymour, who has had the matter in charge. The report of Col. Hope, a celebrated Scotch engineer, is entirely favorable to the scheme and was made at an expense of $20,000. Col. Hope made, for the first time, a survey of the amount of water which passed through the river. On the plans of the survey the force will be 70,000 horse power, which will be placed to consumers at $6 per horse power per annum. Horse power produced by fuel or steam costs a minimum of $45 a year. The principal use of the power, according to plans of the promoters, will be in grinding pulp, the surrounding country furnishing immense amounts of spruce and balsam, which make the very best of paper fiber. It will doubtless also be used for running stamp mills for the reduction of lean silver, nickel and copper ores, which would not pay if the reduction was made by steam. It is proposed to line the canal with stone at an expense of $2,000,000 and make it as solid and permanent as possible."

The MARINE REVIEW, of Cleveland, shows commendable enterprise by reproducing pictures of all the leading steamships of the lakes and sending them out in supplement form. A fine view of the Harlem, built in Detroit, is one of the latest.—Detroit Free Press.

Iron Mining.

VALUE OF LEADING STOCKS.

Quoted by Chas. H. Potter & Co., No. 104 Superior St.

Stocks.	Par Value.	Bid.	Asked.
Cleveland Iron Mining Company	$ 25 00	$ 16 00	$ 18 00
Champion Iron Company	25 00	90 00	100 00
Chandler Iron Company	25 00	39 00	40 00
Chicago and Minnesota Ore Company	100 00	.....	110 00
Iron Cliffs Iron Company	50 00	.....	125 00
Jackson Iron Company	25 00	90 00	100 00
Lake Superior Iron Company	25 00	65 00	68 00
Minnesota Iron Company	100 00	70 00	80 00
Pittsburg Lake Angeline Iron Co	25 00	145 00	.....
Republic Iron Company	25 00	27 00	29 00
Michigamme	25 00	8 50	10 00

Some of the stockholders of the Chandler, Minnesota range, are still at a loss to know why the last installment of $1 in the dividend of $6, declared by the company last year, has not been paid, although they have every confidence in the success of the property, especially since the lease of an additional forty acres adjoining its present holdings has been secured. The explanation of the management was that operations on the new property would require a large expenditure of money and additional funds would be required to carry a large stock pile during a time of depression in the outlook for ore sales. It is thought however that the Chandler's dealings with the Illinois Steel Company may have something to do with the delay in securing ready money. A large quantity of the product of the mine was sold to the steel company and, as the relations between the two concerns are of a kindred nature, the opinion is expressed that the mining company may have been carrying some of the company's paper. The Illinois Steel Company increased its capital from $25,000,000 to $50,000,000 a few days ago. The additional stock will not of of course, be upon the market. If the company earns profits and it is decided to put those profits into extension instead of paying them out in dividends, the stockholders are entitled to stock to represent such expenditures, and this increase in the authorized capital stock will enable this to be done.

It is reported from Milwaukee that companies controlling twelve Menominee range mines have gone into an agreement to turn over their tonnage for a period of ten years to a new railroad it is proposed to build from some point on Green bay to the Menominee range. There are about as many more whose output it is desired to secure before going ahead with the construction of the road. It is intended to make it a strictly Menominee affair, the report further says, and not to extend to any of the other minin g districts.

Notice is published of a meeting of the Detroit Iron Mining Company in Detroit, on March 24, for the purpose of authorizing the sale of the mine. The company has beensinking a shaft for the past year and a half, operations being suspended only a few days ago. The stockholders have given up in despair and their action has caused a great deal of comment as it is thought they were not persevering enough.

The stockholders of the Elba Mining Company decided at a meeting held recently in Negaunee to sink their shaft 100 feet. It is now 110 feet deep, with a west drift of 75 feet and a south drift of 50 feet, both in clean ore. These are the circumstances that make the directors feel warranted in sinking the shaft another level.

H. M. Brown, of Painesville, again revives talk of an ore and coal road out of Fairport to connect with the New York, Pennsylvania & Ohio and the old Phalanx road at Phalanx. It is said that there would be a saving with such a road of thirty miles between the lake and the furnaces of Youngstown and Pittsburgh.

The Hamilton stock pile contains about 22,000 tons of ore. A new stone machine shop has been completed and is awaiting its equipment of tools. The building is 40x75 feet, No.1 shaft will soon be provided with a triple-decked cage for the men. No. 2 shaft was sunk 45 feet in January.

A Worthington pump with duplex 10 x 24-inch steam cylinders and 15 x 25-inch water cylinders, will be soon a part of the equipment of the East Negaunee group, of which the Queen is the principal mine. It is now on the ground.

The Incomplete Lake Census.

Mr. Keep asks in a letter elsewhere that criticism of the census work be reserved until the usual bulletin has been issued from Washington. This request is only fair and would be fully complied with but for the fact that he admits the truthfulness of the partial reports which were criticized two weeks ago, by defending them and, since his communication was received, detailed reports of what the bulletin will contain have been printed throughout the country. They are overflowing with inconsistencies and only go to show that the criticism so far has been mild. The basis of objection is first on this line: It is admitted that the reports of customs officers formed the initial step in the work. Whatever was done afterward to verify these reports could be of little avail, as the custom house data, although known to be unreliable, was accepted in preference to anything else at hand. The census is supposed to contain facts. Under existing laws, no custom house on the chain of lakes can furnish facts regarding the tonnage movement of any port in its district. The report of the Commissioner of Navigation shows that on June 1, 1891, date of the census as fixed by the act of March 1, 1889, the books of the Treasury Department contained names of 3,510 lake vessels with all other necessary information through which their owners might be reached. Why were not every one of these owners consulted by special agents as was the case with many thousands of manufacturers throughout the entire country? Vessel owners did not object to giving reasonable information. They objected to being asked to fill out blanks encumbered with endless detail. They knew, though, how many trips their boats had made and what they had carried, better than the small manufacturer, who keep no books, knew the extent of his business, and they would have given up this information, if they had been granted the assistance of a call from a census agent who could explain and take down what was wanted. This tonnage movement was the most important point for the census to present, and it should be actual, not in estimates, as against absolute figures from railways. How important this comparison between rail and water movement is, can only be considered by those who are interestered in government legislation for the improvement of waterways.

Great space would be required to go into detail regarding the manner in which paragraph after paragraph in the general report seeks to explain away gross inconsistencies in receipts and shipments of the different commodities, but the following will serve as an example:

"Lumber shows an excess of receipts over shipments of 1,508,859 tons, which is equal to 676,244,000 feet, or 22 per cent. of total shipments. This is partly due to the large importation of Canadian lumber, and partly to the fact that lumber in considerable quantities from a large number of isolated mills located at remote ports on the upper lakes, where no record of shipments is kept or can be obtained. No satisfactory explanation can be given of the fact that the receipts of salt exceed shipments by 43,676 tons. It should be stated, however, that in commodities of this class much confusion arises from the fact that they are shipped both in sacks and barrels, and that the custom house authorities of various ports fail to follow the same rule in converting them into tons."

Here is an admission of reliance upon custom house figures and the result is enough to show the justice of all criticism. The difference in these figures on lumber alone would represent the combined cargoes of more than 700 of the kind of vessels engaged in the trade.

Why compare the increase in the lake fleet and the different classes of vessels which it comprises by means of figures from the register of insurance companies? This register is far from comprising the entire fleet and its incomplete comparisons should not go into a census report, when reports of the Commissioner of Navigation since 1884 and the records of the bureau of statistics of the treasury department previous to that time can be made to produce similar comparisions for the whole fleet.

In these and many other respects the census work on lake transportation so far as it has been shown does not present a single feature to recommend itself to those who value statistics in connection with the great interests involved, as the treasury department has presented each year far more complete information regarding the number and class of hulls, new tonnage, etc., and what should be the prime aim of the census, the total tonnage movement during 1889, has been lost and all the calculations based upon it have also been lost, from the fact that columns must be used in the attempt to explain away inconsistencies in unreliable returns taken from customs houses and other inadequate sources.

MARINE REVIEW.

DEVOTED TO THE LAKE MARINE AND KINDRED INTERESTS.

JOHN M. MULROONEY, ... } PROPRIETORS.
F. M. BARTON, ... }

Published every Thursday at No. 510 Perry-Payne Building, Cleveland, O.

SUBSCRIPTION—$2.00 per year in advance. Advertising rates on application.

Entered at Cleveland Post Office as Second-class Mail Matter.

THE twenty-foot channel between Duluth, Chicago and Buffalo is the next great project demanding the attention of lake interests. With the opening of the Fifty-second congress all commercial bodies in lake cities, and the associations of vessel owners especially, should rally to the support of Gen. Poe's important report with regard to this great improvement. No better basis is needed for the initial action than the recommendation of the highest official among the army engineers of the lakes. Gen. Poe endorses the project in the highest terms. "It seems to me," he says, "that no public work, now that the Sault has been provided for, compares in importance with this proposed improvement of the through route. The commercial interests of the lakes cannot move too quickly, too continuously, nor too emphatically toward completing this object."

ONE of the ablest supporters of the vessel owners in their recent efforts to secure legislation that will relieve them of the expense of maintaining private lights, sums up the situation very plainly in these words: "The lake carriers ought not to occupy the attitude of petitioners in this matter standing with their hats off and begging money. The interests which they represent are of the very first importance to the national prosperity, and their attitude should be one of demand and not one of petition. If they expended hundreds in proper means to get their needs before congress where they spend thousands in the maintenance of private lights, everything could have been done long ago."

UNLESS a decided change comes over the situation in Washington within the next few days the line carrying projectile law, for the suspension or repeal of which lake vessel owners have fought so vigorously, will be enforced and every passenger steamer of 100 tons or more will be compelled to carry one of the guns with the other apparatus attending it. Freight boats having a passenger license will, of course, come under the law and on this account a great many lake carriers will be affected by it.

THE members of the river and harbor committees of the house have accepted the invitation of Representative Stevenson, of Michigan, to take a trip up the lakes next summer. This is gratifying. They will be well entertained and such of them as have been elected to membership of the Fifty-second congress will return to Washington with an enlarged opinion of the lake marine.

ONE of the last acts of Representative Farquhar, of Buffalo, in congress—he did not secure a re-election—was to introduce a load-line bill. There was no hope of passing it, however, as the session was too far advanced.

Some Lights and Fog Signals are Assured.

The Cleveland Vessel Owners Association and the Lake Carriers Association, assisted by a few faithful representatives in Washington, have been engaged for two weeks past in a mighty effort to secure some relief through the senate from the burden of maintaining private lights on the lakes. They have been successful to a certain extent and, although little has appeared on the surface, Capt. McKay and Mr. Keep have labored as they never have before for a measure affecting lake interests. It should not be so, however, as the facts will show. The sundry civil appropriation bill, which went to the senate from the house a fortnight ago with provision for but two lights on the entire chain of lakes costing $24,000; provided $270,000 for special new cost lights, and this notwithstanding that the coast had secured $1,017,600 during the last session, as against an appropriation of but $60,0000 for the lakes, which provided only partially for a single light station. In the ninth and eleventh light-house districts alone, taking in only that part of the lakes above the city of Detroit, there is 3,000 miles of coast, equivalent on the seaboard to the coast line from the Bay of Funday to the mouth of the Mississippi river, the commerce of these districts alone exceeding the entire foreign commerce of the United States. At this writing the appropriation bill is being considered by the senate. Some aids to navigation are assured for the lakes but the allowance is far from what it should be.

Four Fleets in Three Years.

The fifth Menominee Transit Company's steel steamship left the stocks at the Globe Iron Works Company's yard, Thursday afternoon. Her name is the Grecian, and the sixth ship of the fleet, the Roman, will follow in time to be fitted out for the opening of navigation. The dimensions of these steamers are 296½ feet long, 312½ feet over all, 40 feet beam and 24½ feet molded depth, and they will have the Globe triple expansion engines. This will make the fourth fleet of steel steamers, all except the Lehigh numbering six, put forth from this yard within three years, and to cap the climax they will put forth the fastest and most elegant steel passenger steamer on the lakes. The last two steamships of the Minnesota fleet are nearing completion at the yard of the Chicago Ship Building Company. The Marina will be launched March 14, and the Mesaba, will follow within a few weeks. The names of this fleet make a little poem—Manola, Mariska, Maruba, Mesaba, Marina, Matoa. The names of the Menominee fleet are not far behind in point of alliteration—Norman, Saxon, German, Briton, Grecian, Roman. The Chicago company will shortly commence work on a steel steam yacht for Mr. Potter, of the Illinois Steel Company. She will be 72 feet long, 12 feet beam and have triple expansion engines, to be built by C. F. Elmes.

Some Talk of Freights.

There is no more indication of anything being done in ore freight contracts or even small sales of ore for next season's delivery than there was at the close of navigation last fall. Ore dealers are making no effort to have furnace men consider anything in the way of sales for next season, as no good could come from such a proceeding at this time, with the coke industry at a stand-still and furnaces still banked in the Mahoning and Chenango districts. The vessel owners present no particular anxiety although the situation is, of course, very discouraging. The committee appointed at the annual meeting of the Cleveland Vessel Owners' Association to consult the dock companies with a view to securing a reduction in handling charges has not as yet made a report, but they presented the unfavorable outlook to the managers of the dock companies, and were assured that if the cost of labor can be reduced in any way the unloading charges will be reduced accordingly.

In the matter of coal freights, there is no talk of contracts on big blocks of coal, but some shippers desire to load boats next month for first trips and have asked for rates in a few cases. They want to get some coal out of the way, in view of indications of a strike of miners on May 1. W. P. Rend & Co., of Chicago, have chartered one boat to load at Toledo for West Superior at 50 cents. This company has also made inquiries among Cleveland owners for boats to load early in March for Milwaukee, West Superior and Duluth. It was said that they would pay 60 cents to Milwaukee and 50 cents to the head of Lake Superior, but as yet nothing further than the single Toledo charter is reported. Two or three boats have been taken for first trips to Detroit at 30 cents.

Appointments of Masters.

Special Correspondence to the MARINE REVIEW.

PORT HURON, Mich., Feb. 26.—Following is the only correct list of appointments of Port Huron, Mich., and Sarnia, Ont., masters: Steamers: Oceanica, W. A. Ashley; one of the "Big Four" building at Bay City, A. A. Cox; Porter Chamberlin, Thos. Currie; Samuel Marshall, Thos. Cowan; Simon Langell, A. R. Sinclair; Tampa, William Hutchinson; Penoyer Bros. new boat, D. A. Hutchinson; Kittie Forbes, W. W. Stewart; Canisteo, Wm. Lynn; Pawnee, E. Davis; W. H. Sawyer, R. E. Gain; A. Folsom, A. Gain; Cleveland, Daniel Sinclair; Mary Groh, Eugene Gooding; Concord, Frank Hebner; Nellie Torrent, M. Madden; Chas. Eddy, H. Zealand; F. W. Wheeler, John Ivers; H. D. Coffinberry, C. Geel; W. R. Stafford, John Stevenson; Sea Gull, H. Stevenson; Tom Scott, H. J. Kendall; Baldwin, A. C. May; White Star, A. Slyfield; Jenks' new boat, Chas. Black; A. McVittie, Wm. Rolo; Mary, S. H. Burnham; Nelson Mills, Capt. Sims. Tugs: Sumner, Chris. Smith; Brockway, Robert Thompson; Sampson, Capt. Cannally; Kittie Haight, Wm. Curtis; W. B. Castle, Wm. H. Smith. Schooners: Favorite, L. Sinclair; L. L. Lamb, Capt. Green; Churchill, Ed. Powers; Fayette Brown, George McCloud; S. B. Pomeroy, F. Walters; Arenac, H. Davis; E. E. Tyson, George McElroy; Lone Star, Thos. Fish; C. Crawford, Allen Curtis; City of Straits, Fred. Minors; Sonora, E. McKay; W. W. Stewart, Ed. Biddlecome; Leader, George McKay; Alaska, H. Jesters; Redfern, George Goins; D. H. Keys, George Nagle; C. Reid, James Hall; Hattie Wells, Wm. Brownlee; Minnie Davis, George Bonnak; F. J. Dunford, D. Buska; Breadwinner, D. Cronin; M. R. Goff, A. F. Van Hommel; Jupiter, Capt. Taylor; Yankee, Ed. Johnson; George R. Hand, W. B. Harrow; Despatch, R. Bartow.

SARNIA—Steamers: Monarch, Capt. Robinson; United Empire, George McDougall; Hercules, J. Glass; Pandora, Thomas Reed; Sovereign, P. Kirwin: Campana, Capt. McNabb; Katahdin, S. Furgeson; Fanny Campbell, Thos. Crosgrove; Cataract, Capt. Sutherland; May, Capt. Osborn; Dauntless, H. Buckley; Fellowcraft, Capt. McKinzie; Transit, R. More; Aurora, Capt. Bartow. Tugs: Jessie, D. McAllistar; Azor, Capt. Munroe. Schooner Louise, John Calwell.

The Port Huron and Sarnia Ferry Company began, Tuesday, to operate the new system of gates on both sides of the river. Much credit is due Capt. A. Neil for the improvements he has made since he took the management of the ferry line. He has built new waiting rooms and custom office and fitted them up in elegant style. Boats of this line will all be fitted out in first class shape the coming spring and will be lighted with incandescent electric lights.

The Scotia and consort Blake were chartered for the season for pine lumber from Blind River, Georgian bay, to Toledo, free on and off rail, for $1.60 per thousand.

George King resigned the position of purser for the Beatty line.

Grand Haven Gossip.

Special Correspondence to the MARINE REVIEW.

GRAND HAVEN, Mich., Feb. 26.—The weather for the past month has been favorable for shipyard work at this port. At Robertson's yard the repairs to the steamer Charles West are nearly completed, and the new fish tug for Milwaukee parties will be launched in a few days. The steam barge, Mary H. Boyce, is being double-decked, and the cabins of the steamship Ionia, badly damaged in the collision with the Monteagle last fall, are being thoroughly overhauled.

Capt. William Loutit, owner of the propeller Charles Street, has secured a charter for his boat and will run her in the ore trade between Escadaba and this port. For reasons not learned, Capt, Kirby, of this city, who has held the contract for this work for the past seven or eight years, takes his boat, the Ford, out of the trade. John Forman and Case Ball, first and second engineers on the Street for past the two seasons, will occupy similar positions on the Ionia during the coming season. Charles Lyman, a well known tug master at this port, has accepted the position of first mate on the Goodrich steamer City of Racine. Contractor Crosby, of Muskegon, will commence putting in the cribs, six in number, at this port about May 1. About 1,800 of revetment will be put in on the north side, extending up the river from the old revetment.

Some Masters and Engineers.

Following are the appointments for the Bradley fleet of twenty-three boats: Steamers—Hesper, Capt. Jones, Henry Shoof, engineer; Gladstone, Capt. J. A. Holmes, Fred Harmon, engineer; Pasadena, Capt. T. H. Rae, F. B. Smith, engineer; M B. Grover, Capt. F. A. Fick, S. H. Hunter, engineer: Henry Chisholm, Capt. Mathew Mulholland, J. W. Twohig, engineer; R. P. Ranney, Capt. John Wysoon, James Shannon, engineer; City of Cleveland, Capt. C. Moran, Engineer Talbott; E B. Hale, Capt. Paul Serrett, Geo. B. Wilson, engineer; J. S Fay, Capt. Wm. Anderson, Engineer Cronley; Superior, Capt. Henry Peterson, J. C. O'Donnell, engineer; Fred Kelley, Capt. L. Stought, Engineer Stalter; S. E. Sheldon, Capt. William Brown, William Angell, engineer. Schooners—Ahira Cobb, Capt. E. Saveland; John Martin, Capt. Paul Howell; D. P. Rhodes, Capt. George McLeod; Negaunee, Capt. I. H. Andrews; Fayette Brown, Capt. Charles Ahlstrom; A. Bradley, Capt Chas. Tift; Thomas Quayle, Capt. William Pitcher; Sandusky, Capt. E P. Spear; M. R. Warner, Capt. N. Gifford; S. P. Ely, Capt. Jason Thomas; S. H. Kimball, Capt. A. P. Klumph.

Mitchell & Co: Steamers—William F. Sauber, Capt. C. B. Galton Engineer, Charles J. Love; R L. Fryer, Capt. M. P. Parsons, Engineer Edward Guy; W. H. Gratwick, Capt. Chris. Peterson, Engineer, Frank Parker; George T. Hope, Capt. B. Nelson, Engineer, Geo. E. Blauvelt; John Mitchell, Capt. C. H. Chamberlain, Engineer, M. Owens. Ed. Smith, No. 1, Capt. B. D. Townsend, Engineer, Peter Lawly; Ed. Smith, No. 2, Capt Alfred Mitchell, Engineer, Nelson Goudette. Schooners—S. E. Marvin, William Brines; R. L. Fryer, Burt Mitchell; C. J. Fillmore, Nat Kendall; Angus Smith, A. Meswald; Troy, J. Williams. No appointment has been made on the schooner Maria Martin.

General Manager Ricketson, of the Inter-Ocean Company, has appointed the following officers: M. Conley, chief engineer; Maryland, Capt. James E. Yax, Engineer S. C. Davis; Manchester, Capt. Timothy Kelley, Engineer James Grant; Manhattan, Capt. H. F. Loftin, Engineer William Turnbull; Massachussetts, Capt. P. A. Anderson, Engineer Philip Van, Rensselaer; Mer imac, Capt. William J. Pringle, Engineer W. R. Patterson; Minnesota, Capt. Daniel Jones, Engineer W. H. Pinkham; Metacomet Capt. W. L. Shield.

Work of the Ship Yards.

The work of rebuilding the tug Mocking Bird, damaged by fire at Cheboygan last fall, is completed at the Bay City dry dock. The cost of the repairs is about $9,000. About $8,000 has been spent on the Tasmania, being rebuilt at the same port. The place now occupied by the Tasmania will be taken by the steamer Ohio, which will receive a new cabin and new upper works, at a cost of $14,000. The barge Harvey Bissell will also go into the dry dock to receive steel arches, a steel keelson, new planking in her bottom and a thorough recaulking The cost of the repairs will be about $3,500.

Frank E. Kirby, of the Detroit Dry Dock Company, is said to have designed another passenger boat to be built next fall for Detroit river service. She will be 165 feet long and 35 feet beam and of very light draft. It is expected she will attain a speed of twenty miles an hour. Boilers and engines will be below the main deck allowing additional space for freight. Two cabins above will have five feet of clear deck on either side. The hull is of a peculiar model. It flares out from the water line to the guards, so that the greater the load the more beam the boat will have. This will prevent listing, which would otherwise occur on account of the light draft.

Excelsior Marine Benevolent Association.

Capt. Daniel McKenzie was initiated as a member of the Buffalo lodge last Saturday.

At Thursday's meeting of the Port Huron lodge Parks A. Melwold and D. Duncanson were elected to membership.

At Friday's meeting of the Cleveland lodge Capt. Carlton Graves was elected to membership. It has been decided to hold the banquet and ball, the first social gathering of the lodge, at Haltnorth's hall on the evening of March 5.

Several changes of officers have taken place in the new Milwaukee branch since the organization. The officers now are: James Leisk, president; F. C. Maxon, Samuel Neff, vice-presidents; R. W. Williams, recording secretary; L. R. Vance, financial secretary; John Cochrane, marshal; John R. Gurman, warden; William Jamieson, chaplain: Thomas Richardson, sentinel. Timothy Lemay was elected to membership at last Saturday's meeting.

AUCTION SALE.

BY VIRTUE of an order of the Circuit Court for the County of Wayne, in chancery, made and entered on the 12th day of January, A.D. 1891, in a cause pending in said court wherein Charles L. Ortmann is complainant and the Au Sable Transportation Company, J. E. Potts Salt & Lumber Company, John E. Potts and David Tisdale are defendants, I shall on Tuesday, the 3d day of March next, at 10 o'clock in the forenoon of that day, sell at public auction to the highest bidder at the premises of the Detroit Sulphite Fibre Company on the River Rouge, Township of Springwells, Wayne County, Michigan, where they now lie, the steambarges H S. Pickands and Salina, with their machinery, engines, boilers and appurtenances, the schooner Keep-ake and sloop Shiawassee with their appurtenances. A. G. LINDSAY, Receiver.

February 7, 1891.

Around the Lakes.

Henry Meyers has purchased the schooner Odd Fellow for $1,800.

Capt. Samuel Louch, a well known lake man died of apoplexy at Erie last Friday.

Capt. F. L. Maynard is engaged in rebuilding the propeller Emerald and tug Minnie Karl at Ashland.

The tug D. L. Babcock. has been sold by the estate of the late David Dall to R. Connable & Sons, fish dealers, Chicago. Consideration $2,100.

Capt. Edward Boyer of Mt. Clemens died recently, aged 75 years. He was half brother to Capt. William Dulac, and had sailed on the lakes many years.

A report from London says that several underwriters at Lloyds are quitting the business, owing to the discouraging condition of affairs in the marine line.

The number of arrivals reported at the Marquette custom house during last season was 977; departures 989. The dock records show 1,450 arrivals and 1,450 departures.

William H. Loutit, who holds a mortgage on the steamer Sachem owned by J. E. Potts, the big lumber dealer who failed a short time ago, will sell the boat to the highest bidder on March 10. 10 a. m., at Delroy, near Detroit.

Michigan's lumber product for last year aggregated in round numbers $70,000,000. This was a decrease from the preceeding year. In round numbers the product of 1890 was: Lumber, feet, 8,664,504,715; shingles, 4,487,824,500.

The John Doty Engine Company, of Toronto, is building the boilers for the steamer Corsican, of the Richilieu & Ontario Navigation Company, being constructed at Saugatuck, Mich. Several of the plates are 30 feet in length, 9 feet in width and 5/8 inch thick. They were procured from the Lukens Steel Company, of Coatsville Pa.

The contractors engaged in constructing a dock at Superior for the Standard Oil Company are meeting with some difficulty, on account of the soft condition of the bottom, peculiar to this portion of St. Louis bay. In one spot six 40-foot spiles were driven one day last week to answer the purpose of one. The six sticks of timber on top of each other measured 240 feet in length.

The report of the weighmaster of the Buffalo Merchants' Exchange shows that on 47,000,000 bushels of grain, mostly corn, received from Chicago, the shortage was seven pounds to 1,000 bushels, while on 10,446,000 bushels from Duluth the shortage was forty-five pounds to 1,000 bushels. On about 3,000,000 bushels from Milwaukee and Toledo the average shortages were twenty-three and twenty pounds respectively. This is a bad showing for Duluth and especially on grain from the Great Northern elevator of that city, which shows a shortage of seventy-five pounds to 1,000.

Cleveland Matters.

Mr. J. O. Farrell, of Buffalo, was in the city during the week.

WAWATAM and not Mowatam is the name of the new Lake Superior Iron Co's. boat launched from the Cleveland Ship Building Co's. yard last week.

The new steamship being built by Wheeler & Co., of West Bay City, for Capt. John Mitchell and others will be called William F. Sauber. William F. Sauber, of Marine City, is largely interested in the boat.

Messrs. Rose and Lazier, of the Duluth brokerage firm of Rose & Lazier, have both visited Cleveland and other lower lake ports recently, adding to their large circle of acquaintances. Both of these gentlemen have the benefit of experience in the transportation business at the head of Lake Superior and their partnership is an assurance of success.

Pierrepont Morgan's new steam yacht, building at Philadelphia by Neafie & Levy, will be very large: being 235 feet over all, 27 feet beam, 18 feet deep and 10 feet draft. She will have triple expansion engines of 2,000 horse power, with cylinders 21, 33 and 54 inches by 30 inches stroke, worked at 175 pounds pressure; there are two Scotch boilers, 4 feet 5 inches in diameter, with 4,700 feet heating surface; forced draught will be used. The engines are expected to make 160 revolutions per minute.

Lumber Industry Shifting Westward.

The center of the white pine industry is shifting westward. Here are some figures compiled by the Northwestern Lumberman, of Chicago, in conjunction with the Saginaw Courier-Herald, showing the cut of the Michigan mills:

	Lumber.	Shingles.
Saginaw river mills	815,054,465	221,839,000
Tawas and East Tawas	70,393,421	11,887,000
Au Sable and Oscoda	286,489,570	15,100,000
Alpena	199,066,156	32,900,000
Cheboygan	127,540,000	3,000,000
Miscellaneous Huron shore	29,913,994	16,100,000
Manistee	280,495,172	404,378,500
Ludington	150,605,714	114,422,750
Muskegon	433,960,533	364,721,000
White Lake	23,500,000	41,000,000
Grand Haven and Spring lake	32,668,392	....
Michigan Central, Mackinaw division	130,731,568	126,800,000
Flint and Pere Mrrquette	77,829,402	176,820,000
Grand Rapids & Indiana	191,658,684	93,172,000
Chisago & West Michigan	138,382,923	97,895,000
Detroit, Lansing & Northern	30,984,023	162,466,000
Miscellaneous western Michigan	69,631,435	53,916,000
Miscellaneous lower Michigan mills	77,066,534	135,700,000
Menominee	261,410,126	88,756,500
Miscellaneous Green bay district	203,348,571	183,436,000
Lake Superior district	450,046,166	125,565,000
Total	4,085,767,849	2,469,878,750

It will be observed that these figures include the cut of the Green Bay shore mills in eastern Wisconsin, mills along the Soo in Michigan and mills along Lake Superior, also in Wisconsin. The figures present the following comparisons over a number of years:

	Lumber, ft.	Shingles.
1885	3,578,138,732	2,574,676 000
1886	3,984,117,175	2,988,124,232
1887	4,162,317,778	2,678,858,750
1888	4,292,189,014	2,846,201,000
1889	4,206,841,224	2,602,930,250
1890	4,085,767,849	2,469,879,750

It will be noticed that there has been a steady increase in the output of lumber in the territory embraced in the above summary since 1887, and that too in the face of the fact that the summary includes some western territory where there has been an increase of the cut.

Ashtabula Towing Service.

Cleveland vessel owners have been complaining for some time past of tug service at Ashtabula Harbor and it is understood that there is now a move on foot to purchase several tugs, with a view of securing next season more attention for the important lake carriers trading to that port. The aim is to obtain a guarantee of business from the transportation lines before beginning operations. There are certainly tugs enough on the lakes and it would behoove the Ashtabula owners to give the vessels better treatment than they have received during the past two seasons.

A Better Outlook in Lumber.

Encouraging features in the lumber trade are reported from all parts of the northwest. The demand is exceptionally large for this season of the year. Trade in the Saginaw valley is reported quiet but it is evident that eastern buyers are reaching up into the Lake Superior region for their supplies and the movement from that part of the country will increase with each succeeding year.

A Legend of the Lakes.

Take time to list to a legend that is old enough to be true, about a a wonderful region, that is covered with waters blue. O. u. a. t., an old miser of monste · size kept a team of blue bottle flies, that daily he drove through the air like the queen of the fairies fair. His hoard was a glittering store that weighed ten ton or more. While dri ing he thought to himself, consider the size of my pelf, I have hoarded e'er since my birth—I'm foolish, I'll just take the earth. He reached down from his aerial car and swore by his own brightest star, as he let fall his monster hand on our free and beautiful land. (The sun opened his flaming eyes and slipped a cuss word of surprise.) The miser's fingers sank in the sand, the earth got tired and wouldn't stand, the result—five holes in the land, five of our great lakes—understand? The strain loosened the miser's hold on this ten ton, or more, of gold. Where did it fall?—into the lakes. Sixty million of this treasure now floats in the shape of steel steamers and boats; six million more will rise in the spring, is'nt this a wonderful thing?

Admiral Porter's Provisions for Lake Defense.

During the past four or five years the late Admiral Porter became considerably interested in the lakes and the part their occupation would play in a naval conflict. He also considered the same idea during the late war, but he has in recent years repeatedly advised the enlargement of the Erie canal sufficiently to admit the passage of cruisers to the lakes, in case they were needed here. Failing to interest the naval department in this project, some two years ago he wrote to President Coffinberry, of the Cleveland Ship Building Company, who was in command in the Mississippi squadron under the admiral,and asked for a detailed description of the steel steamers building on the lakes, of which he had heard considerable. He asked for an opinion as to what extra plates would be needed to make them fit for battle. The information was given him concerning scantlings, etc., and he was well satisfied, stating that very serviceable war ships could be procured in short order from lake ore carriers. He expressed so much interest in the matter that he was invited to visit the lakes and take a trip up the lakes. The invitation was acknowledged, and the old naval hero would have probably taken the trip this season.

His interest in another possible war at his ripe age was characteristic of his will power and determination, illustrated by a little incident at the engagement of Fort Hindman In the opinion of all the commanders the closing day was welcomed as an excuse for retiring from their position and getting away from the disastrous fire from the fort. In his orders he complimented the officers for their bravery and arranged for the re-opening of the engagement at daylight.

Affairs in Admiralty.

HOW NEGLIGENCE FIGURED IN INSURANCE.

The case of an insurance company known as the Universal Marine against the bark Micanor, of New York, recently tried in the circuit court, New York, some interesting conclusions are given out. After passing a certain point at night, a vessel tacked, and the master proposed to take a certain course, (northeast) which, if made good would carry the vessel free of obstructions. There was a dense fog around the vessel, and she stranded at midnight. She had been within the clear weather range of a certain light for two hours, but her navigators had not seen it. She had in fact been making a northerly course, owing to a change in the wind and to the existence of a certain current. The fact that the currents in the region are variable is well known to navigators and is set forth in ordinary sailing directions. No soundings were taken, though they would have been sufficient to tell the vessel's navigators that she was not making her proposed course good, and the importance of taking frequent soundings in the waters in question is given in ordinary sailing directions. The court held that the stranding arose from negligence, and such negligence would defeat any claim for contribution by the vessel's owners on account of such stranding. It was also held that where a marine protest, showing the fact that the stranding was caused by negligence, is open to the inspection of underwriters, and there is no misrepresentation or concealment on the part of the ship's owners or agents, payment by the underwriters to the ships agents, on account of general average adjustment, is voluntary and can not be recovered back.

An interesting damage suit was decided recently by Judge Otis of the District Court at St. Paul. In September, 1889, Patrick McCarthy was badly hurt on board the Lehigh Valley liner Wilbur, at Gladstone. McCarthy, who was in the employ of the Soo Railroad, was assisting in loading the vessel with flour. The strong back over the working hatch slipped out of place and struck him on the right side of the head and shoulder. He was seriously injured, and his left arm became paralyzed. So he sued the steamboat company for $30,000 damages. Judge Otis decided that the accident was the result of negligence on the part of co-laborers also employed by the Soo line, and that the steamer was in no wise to blame therefor.

McBean, Edge & Co., Buffalo, N. Y., are manufacturing signal lamps with smooth face marine lens, a new and excellent feature in marine signal lamps, and by permission of H. C. Felthousen, they manufacture signal lamps with his patent fluted lens. They are now prepared to manufacture signal lamps from any style of lens wanted.

Appreciation.

MILWAUKEE, Wis., Feb. 3, 1891.

Publishers MARINE REVIEW:

Gentleman: The last number of the REVIEW failed to reach the Evening Wisconsin. If our subscription has run out please renew, forward bill and remittance will be made. The REVIEW has become such a welcome visitor we cannot well do without it. LOUIS BLEYER, Marine Editor.

After calling attention to an enclosure for renewal, a Minneapolis, Minn., subscriber writes:

"Your paper holds a high place in my estimation as an educator and as a panacea for all the ills which befall the nautical mind. Hoping to increase my stock of marine lithographic gems, I am," etc.

Jan. 28, 1891.

54 Farrington Road, E. C.
Opposite No. 121, London, England.

MARINE REVIEW,
Cleveland, Ohio, U. S. A.

Gentlemen: A customer of ours desires us to obtain for him the following publications: The MARINE REVIEW and one copy of Howard Patterson's Illustrated Nautical Dictionary. Kindly forward these and send invoice. Yours truly,

M. R. MCCOY.

MILWAUKEE, WIS., Jan. 31, 1891.

MARINE REVIEW, Cleveland, O.: Enclosed find express order for $2.50. Please send me Beeson's Sailors' Handbook and the MARINE REVIEW for one year. The REVIEW is an excellent marine paper and I can recommend it.

HERMAN G. RUNGE.

For Advertisers.

The following circular has been sent to patrons by the Cleveland Facing Mills: A question: "Are you satisfied with amount of business transacted in 1890? Answering for our selves, we are. This has been the best year we ever enjoyed in the Foundry Facing and Supply business, and we have had about seventeen years experience."

In connection with the card of M. D. and L. L. Leggett patent solicitors, in this issue it may be stated that the MARINE REVIEW has arranged to illustrate patents for marine or mechanical devices secured by this firm.

If you receive a copy of PRINTERS' INK for the coming six months don't imagine it is sent gratis. The MARINE REVIEW paid for it. If you read the first number you will not miss the other twenty-five, and if you read that gem of an advertising journal six months you will have some new ideas, and the MARINE REVIEW wants its advertising columns to keep pace with its reading matter columns in new ideas.

Viscosity is the word used to describe the oils manufactured by the Erie Oil Company in their advertisement this issue. It means glutinous consistency, adhesiveness.

Attention is called to the department of the REVIEW devoted to directories for the different lake ports. They were arranged for firms who do not care to expend $50 or $100 in advertising, but who wish to call attention of REVIEW readers to their business. Queen City Metal Co., Buffalo, and the Clyde Iron Works, Duluth, have headed respective lists with cards.

The Jenks Ship Building Co. is the name of a newly incorporated company at Port Huron that will turn out two good sized steamers during their first year. When you build give them a chance to figure.

The Forest City Brass Works, Cleveland, will occupy a new building now under construction, 77 x 200 feet, giving room for the turning out of 4 000 Kennedy injectors. Over 1,800 were shipped last year by this company.

The Continental Machine Co., Cleveland, have just completed the work of bushing the small cylinder of the Kaliyuga's engine. The bushing weighed two tons, and the size of the cylinder was reduced from 31 to 28 inches.

BUFFALO DIRECTORY.

EDWARD C. GREENOUGH. PHILIP TUMMELTY.

QUEEN CITY METAL COMPANY,

Machine Shop and Brass Foundry, Copper and Sheet-Iron Work and General Repairing, and Engineers' Supplies.

Nos. 16, 18 & 20 ELK ST. **BUFFALO, N. Y.**

VESSEL AND MACHINERY EXCHANGE.

Space under this heading may be used gratis by our advertisers or subscribers to call attention to vessels or any craft, machinery, new or second hand, that they may have for sale. Those wanting machinery of any kind, or wishing to purchase vessels, are invited to take advantage of the same offer. Each item will be limited to three lines. Letters concerning same must mention number attached to item and be addressed MARINE REVIEW, 510 Perry-Payne Building, Cleveland, O.

39—FOR SALE—Two tugs; one is 63 feet long, and has 14 x 19 engines, and the other is 40 feet long, and was built two years ago

40—FOR SALE—Steamer George Spencer, with old ore contract for coming season. Good condition; good carrier; good tower.

41—FOR SALE—Two fire box marine boilers, 6½ ft. by 13½ ft., allowed 90 pounds steam, deep furnace, suitable for wood or coal, in good order.

42—WANTED—Dredge in good condition. Give size of dipper, and when and by whom built.

43—FOR SALE—Newly finished 76 foot tug, engine 18x20, fine model.

44—FOR SALE—The Steamer A. L. Hopkins, carries 1,100 tons on 13½ draught water; thorough fit-out for all kinds freight, and complete in every way.

45—FOR SALE—Barge Senator Blood, in good condition.

46—FOR SALE—Steambarge, 102 ft. keel, 24 ft. beam, 7½ ft. hold, steeple compound engine, 12 in., 21 in. by 16 in, 125 pounds steam.

47—FOR SALE—New Barge building, 127 ft keel, 30 ft. beam, 9½ hold, diagonally strapped, steeple compound engine, 14 in., 28 in. by 24 in., 125 pounds steam.

48—A few shares of stock in a first class passenger transportation company, for sale at $100 each.

49—FOR SALE—Ferry and towing line with contracts worth $?,000.

50—FOR SALE—Tug, 52 ft. over all, 11 ft. beam, engine 10 x 12, boiler allowed 100 pounds, built in 1887.

51—WANTED—A Lighter, 75 to 80 feet long, 20 feet beam, that can carry 75 to 100 tons of coal on deck.

FOR SALE: The Steamer A. L. Hopkins.

Carries 1,100 tons on 13½ draught water. Thorough fit-out for all kinds freight and complete in every way.

For full particulars, address **A. W. COLTON,**
Gen'l Manager, TOLEDO, O.

FOR SALE!

Barge Senator Blood.

Capacity 340 M., coal 500 tons. Fit-out all in first class shape.
For further particulars, address

or CAPT. H. MAY, **Port Huron, Mich.**
KENDALL MARINE REPORTING CO. **Port Huron, Mich.**

For Sale: Tugs, Marine Boiler, and Steam Heaters.

We have several good tugs; also, a second hand marine boiler 14 feet long and 7 feet 6 inches diameter; allowed 80 lbs. steam; in good repair. Also, several second hand tug boat heaters for sale at reasonable prices. Apply to

DUNHAM TOWING AND WRECKING CO.,
mar 31 **210 S. Water St., CHICAGO, ILL.**

FOR SALE!

SIX STEAMBARGES, 400 to 1200 tons capacity.
SIX SCHOONERS. 800 to 1400 tons capacity.
TWELVE SCHOONERS, canal size.
FOUR LUMBER BARGES. 350 to 400 M feet capacity.
TWO RIVER TUGS. TWO HARBOR TUGS.

Reasonable prices and terms. Address **M. L. MARSH & CO., Sandusky, O.**

NEWLY FINISHED, FINE MODEL, FAST TUG FOR SALE.

Dimensions, 76 feet long, 15½ feet beam, 7 feet deep, with an engine 18 x 20; steam supplied by steel boiler 6 ft. 8 by 10 ft. 8.

D. BELL ENGINE WORKS. ***BUFFALO, N.Y.***

FOR SALE! SCOW JAY BIRD,

Rebuilt in 1890, good fitout, 50 tons burden, good carrier and sailor. Terms cash, or long time on good security. Address ALEX. RUELLE,

381 Atwater St. E., DETROIT, MICH.

HAVE YOU A LIGHTER FOR SALE?

It must be 75 or 80 feet long by 20 feet beam, and carry 75 or 100 tons of coal on deck. If you have, address

FUNK, POWERS & CO., **501 Owings Buildings, CHICAGO, ILL.**

CON. STARKE. JOS. WOLTER. AUG. RIEBOLDT.

RIEBOLDT, WOLTER & CO.,

SHIPBUILDERS.

CHEBOYGAN, WIS.

FLOATING DRY DOCK WILL LIFT VESSELS OF 400 TONS.

MAGNESIA SECTIONAL PIPE AND BOILER COVERING,

Recommended by the United States Government. Indorsed by the Board of Underwriters.
Preferred and used by leadin Electric Companies everywhere.
This is the best covering in the market and is specially adapted for marine work.

I CAN REFER TO OVER FIFTY STEAMERS WHOSE BOILERS I HAVE COVERED WITH IT. WRITE FOR ESTIMATE ON ANY WORK YOU MAY THINK OF HAVING DONE.

S. P. CONKLING, 1 Larned St, West, Detroit, Mich.

MILWAUKEE BOILER COMPANY,

[Successor to R. Davis Marine Boiler Works.]

Manufacturers of Marine and Stationary Boilers, Smoke Stacks, Tanks, Etc.

MARINE REPAIRING SPECIALLY ATTENDED TO. | Open Day & Night. | OFFICE AND SHOPS, OREGON BET. BARCLAY & So. WATER STS.

T. L. McGREOR, Supt. **MILWAUKEE, WIS.** Telephone 742.

F. A. FORCIER. M. L. WEIL.

The Champion of all Fire Extinguishers!

Just the Thing that is Wanted on Every Vessel!

CLEVELAND, O., Sept. 19, 1890.
Black Cloud Chemical Fire Extinguisher Co.:
GENTS: It affords me great pleasure to testify of the great work your extinguisher does. I have four of them on board and for their simplicity of handling, as well as quickness of extinguishing a fire, they have no equal. Yours truly, CAPT. H. H. HICKMOTT,
Schooner E. B. Palmer.

BLACK CLOUD CHEMICAL FIRE EXTINGUISHER CO.
26-30 E. Main Street. **CLEVELAND, OHIO.**
Office, 31 Atwater Building.

TRAVELERS' REGISTER.

Standard time, given here, is 33 minutes slower than City time.

THE NEW YORK, CHICAGO & ST. LOUIS R. R.

	Arrive East.	Depart East.
Buffalo Passenger	10 40 AM	10 45 AM
Chicago Passenger	9 20 PM	.....
WESTWARD.	Arrive.	Depart.
Chicago Passenger	.....	6 30 AM
Fostoria Passenger	5 06 PM	5 11 PM

All trains daily except Sunday.

ERIE RAILWAY.

	Arrive.	Depart.
Youngstown Accommodation	*7 15 AM	†6 05 AM
New York and Pittsburg Express	†5 15 AM	*8 10 AM
Pittsburg Accommodation	*12 45 PM	*11 25 AM
New York & Pittsburgh Limited	*9 55 AM	*2 55 PM
Mantua Accommodation	*7 20 PM	*4 20 PM
Youngstown Express	†9 10 PM	†6 00 PM
New York & Pittsburgh Express	*6 50 PM	*11 00 PM

* Daily. † Daily except Sunday.

This is the only route by which passengers can reach Corry, Elmira, Binghampton and New York City without change.

The short and direct route to Pittsburg, Washington and Baltimore. Only 4½ hours to Pittsburg; four trains daily.

For tickets, sleeping car space and further information address City Passenger Agent, 141 Superior St., (Weddell House block,) or Central Passenger Station, South Water Street.

A. M. TUCKER, Gen'l Supt., Cleveland, O.
G. E. FOUTS, C. P. and T. A., Cleveland, O.
W. C. RINEARSON, Gen. Pass. Agt., New York.

Duluth, South Shore & Atlantic Railway,

OVER 100 MILES SHORTER than any other line between And Principal New England and Canadian Points and the great Northwest. **BOSTON, MONTREAL,**

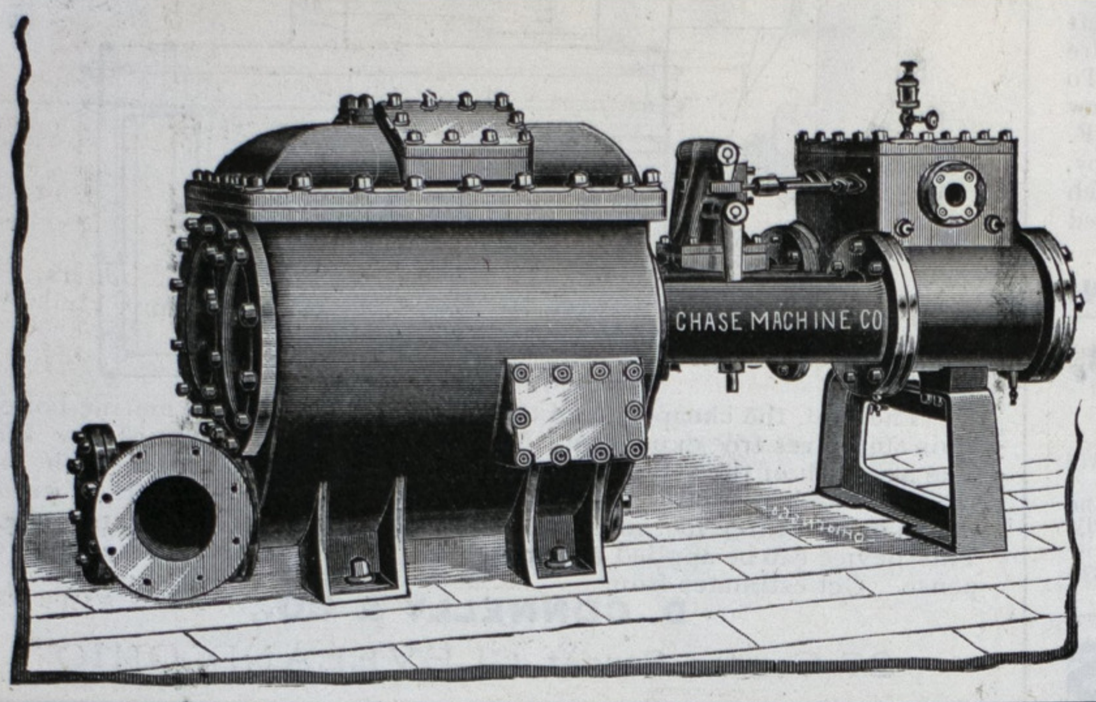
THE ONLY LINE TO ST. PAUL AND MINNEAPOLIS, VIA DULUTH.
The New Short Line from principal points in Michigan to DULUTH. PACIFIC COAST and intermediate sections. RATES ALWAYS THE LOWEST.
New and elegant Wagner Vestibule Buffet Sleeping Cars on through trains. For time tables, tickets and general information call on nearest ticket agent or write to

C. P. FLATLEY, Genl. Western Agt., 291 Jackson Street, ST. PAUL, MINN.
V. DEARING, District Pass. Agt., 202 Main Street, JACKSON, MICH.
T. H. LARKE, Commercial Agt., 327 Superior St., DULUTH.
W. F. FITCH, Genl. Manager,
C. B. HIBBARD, Genl. Pass. & Tkt. Agent, MARQUETTE, MICH.

KING IRON BRIDGE & MFG. CO.,

CLEVELAND, O.,

Hoisting and Conveying Machinery for Handling Ore, Coal, &c.



THE CHASE MACHINE CO.,

111 Elm St., CLEVELAND, O.,

Machinists and Engineers,

MANUFACTURERS OF

Land and Marine Engines and Steam Pumps,

Sole Owners and Manufacturers of the

CHASE FOG WHISTLE MACHINE.

Special Attention given to Marine Repair Work.

ENGINEERS' SUPPLIES. ASBESTOS PIPE and BOILER COVERING.

Agents for the J. L. Rubber Valves, and Leonard & Ellis' Valvoline.

Telephone 994.

DIRECTORY OF LAKE DRY DOCKS,

Giving Dimensions and Location of all Important Docks, for Information of Owners and Masters.

DOCK.	LOCATION.	Length on Keel Blocks.	Width of Gate.	Depth of Water on Sill and Keel Blocks.	SPECIAL ADVANTAGES.	FOR NIGHT SERVICE.
Bay City Dry Dock & Ship Y'd Co.	Bay City, East Side River,.....	310	42½-43½	13–14	Nearest Dock to Mackinaw and Sault Ste. Marie.	Call Foreman Edward Trahan, cor. McEwan and Water Sts.
Cleveland Dry Dock Co.	Cleveland, So. Side River Bed,	312	40 ft. 8 in.	11½–12	Nearest Dock to Harbor Entrance.	Watchman at Dock. Manager, 75 Duane St. Foreman, 126 Fulton
Clark Dry Dock Co.....	Detroit, Lower Docks,.....	360 220	68 42	10½ 9 upper 11½ 10 end.	.....	Watchman at Dock will call Superintendent.
Detroit Dry Dock Co.	Detroit, Upper Docks,.....	239 300	42 56	8 12	.....	Watchman. Will call Sup't.
Ship Owners' Dry Dock Co.....	Cleveland, Head Old River Bed	340	50	18	Depth of water enables loaded vessels to dock here.	Call Watchman.
Union Dry Dock Co.....	Buffalo,..... Upper, Lower,	343 343	48 44	10½ 15½	Three steam derricks connected with each dock.	Call watchman.
Wolverine Dry Dock Co.....	Pt. Huron, near Water Works.	200	40	14	Dock Waterlogged Vesssls.	Watchman at Dock, nights and Sundays to call foreman.
R. Mills & Co.....	Buffalo, N. Y.	280 320	40 46	12 13½	Boom Derricks.	Call Watchman.

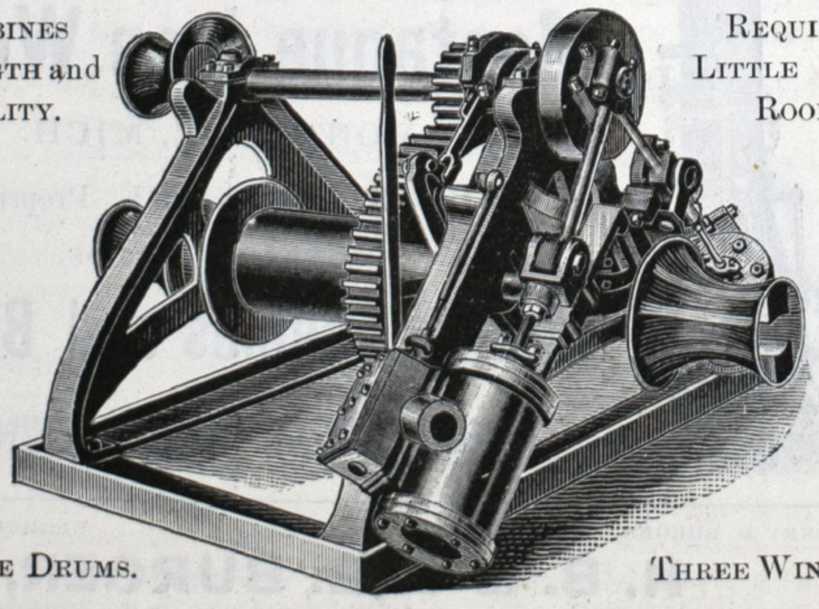
THIS DECK HOIST

WORKS WITH LINK MOTION, HAS INCLINED CYLINDERS,

IS OPERATED BY ONE LEVER, AND POSSESSES MANY ADVANTAGES OVER OTHER HOISTS.

COMBINES STRENGTH and UTILITY.

REQUIRES LITTLE DECK ROOM.



DOUBLE DRUMS.

THREE WINCHES.

IS BUILT BY THE CONTINENTAL MACHINE CO.,

W. A. LLOYD, Manager,

Elm and Hemlock Streets, CLEVELAND, O.

Special attention given to Marine Repair Work, Blacksmithing and Pipe Fitting. Engineers supplies kept in stock.

MILLER CHEMICAL ENGINES.

"No Boat Properly Fitted Out Without Them."

Use only Machines that are RELIABLE; that have PROVED themselves IN ACTUAL SERVICE. 100 Boats already use them.

Cleveland, O., Jan. 6, 1891.

MILLER CHEMICAL ENGINE CO., Room 4, Bratenahl Blk.

GENTLEMEN: I had occasion on the 13th of November to use your Extinguisher on board the steamer Queen of the West, of Cleveland. A large lamp used for signal purposes aft, fell about twenty feet and set fire to the whole roof of the engine room. I do not know what the consequences would have been but for the prompt and effectual way in which your extinguisher put out the fire, as the wind was blowing hard and a heavy sea running at the time. I heartily recommend your machine as a fire extinguisher on all classes of steamships. Yours truly,

JOS. A. NICOLSEN, Master Str. Queen of the West.

182 24th Street,

MILLER CHEMICAL ENGINE CO. Detroit, Mich., Jan 12, 1891.

DEAR SIRS: Going up Lake Huron last fall during a heavy gale of wind and a big sea running, a fire broke out in one of the rooms of the steamer Fayette Brown, through the accidental upsetting of a lamp among some papers, and had gained considerable headway before discovered. By the prompt use of one of your Chemical Engines it was quickly subdued, and I think there was less than a pint of the fluid used. Have no doubt the fire would have given us lots of trouble without some such prompt and easy way of extinguishing it. Since that time I do not think a steamboat properly fitted out without the Miller Chemical Engine.

Yours truly, C. H. BASSETT, Master Str. Fayett Brown.

FOR SALE SMALL FERRY AND TOWING LINE,

With contracts for $2,000. Towing and lease of docks for five years. Line cleared $3,000 last year. For references, etc., address,

CONSOLIDATED FERRY CO., LUDINGTON, MICH.

"Redeeming My Pledge."

DURING THE MONTHS OF CANVASSING, PREPARATORY TO THE CLMPILING OF

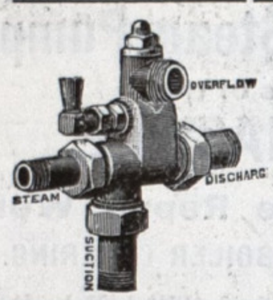
BEESON'S SAILOR'S HAND-BOOK

AND

INLAND MARINE GUIDE,

for 1891, the writer has repeatedly promised that the work would be advertised, advertised extensively, and advertised expensively, and no stones left unturned, looking towards securing an unprecedented circulation. The entire work is being electrotyped to provide for the running of an extra edition. To day, Feb. 18th, I have placed on exhibition in Detroit, the largest Marine View (in oil), ever painted for use as an advertisement, it is the work of H. F. Sprague, of Cleveland, and the picture presents a portrait of the Sailor Boy, whose picture appears on the cover of the American Edition of my Book, which will come from press March 5th. This painting referred to will be exhibited in all the leading cities on the lakes. Respectfully,

Price of Book $1.00, Order Now. **HARVEY C. BEESON.**



The Globe Injector.

Works from 25 to 140 lbs. Pressure and Higher if so ordered.

Hot pipes, jar or other motion will not effect it. A trial will convince you of its merits. On trial to responsible parties.

Extra Heavy Check Valves for marine purposes. Valves and Seats of hard metal can be renewed without disconnecting body. Write for prices. MANUFACTURED BY

MARTY BROS. 43 W. SUPERIOR ST. CLEVELAND, O.

PHOENIX IRON WORKS

—MANUFACTURERS OF—

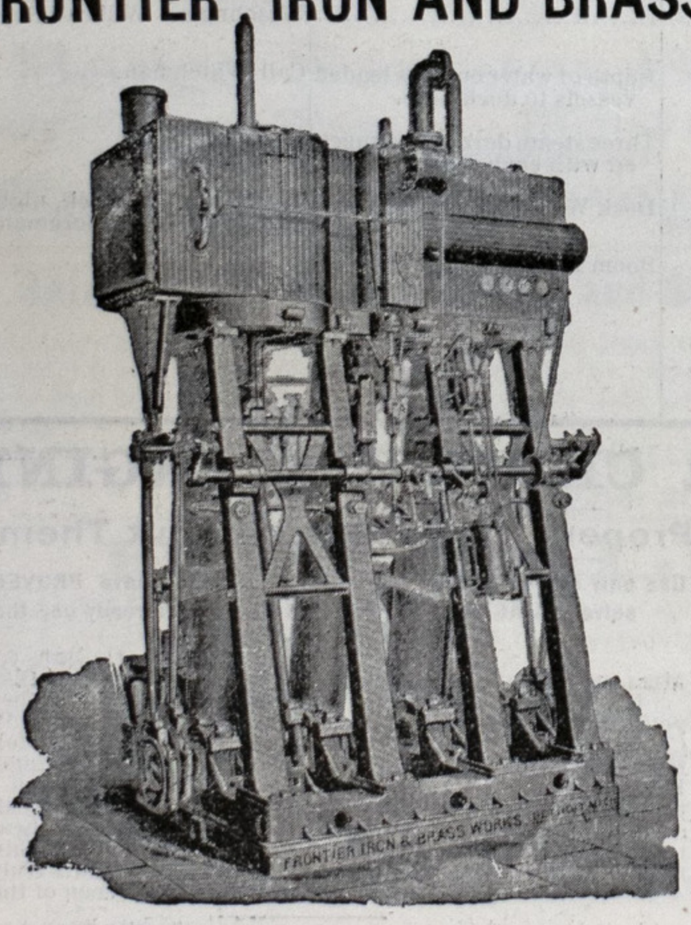
Modern Marine Engines and Boilers

1223 to 1231 Fourth St., PORT HURON, MICH.

Telephone Nos. { Office, 15. Residence, 192.

Special Attention Given to Repairs.

FRONTIER IRON AND BRASS WORKS,



Fitted with "JOY" PATENT VALVE GEAR.

DETROIT, MICH.,

Builders of

TRIPLE EXPANSION

and all kinds of

Marine Engines

Engines furnished for Steamships:

T. W. Palmer,
Livingstone,
Majestic, Tampa,
John Mitchell,
Nyanza, Fedora,
Geo. F. Williams,
Mackinaw,
Keweenaw,
Jno. Harper,
Panther, (fore and aft compound)

and for the two counterparts of the Tampa, building at Wheeler's yard.

MARINE BOILER WORKS,

(Formerly RUSSELL IRON WORKS.)

1013 and 1015 Water Street, - - - TOLEDO, OHIO.

R. REEVES & CO.,

Manufacturers of MARINE, PORTABLE AND STATIONARY BOILERS, TANKS, HEATERS, SMOKE STACKS, and all kinds of SHEET IRON WORK.

Repairing promptly attended to. Estimates given.

HAVE YOU HEARD OF THE

HYDRAULIC STEERING GEARS.

IT IS ASTONISHING HOW WELL AND EASY THEY DO THEIR WORK.

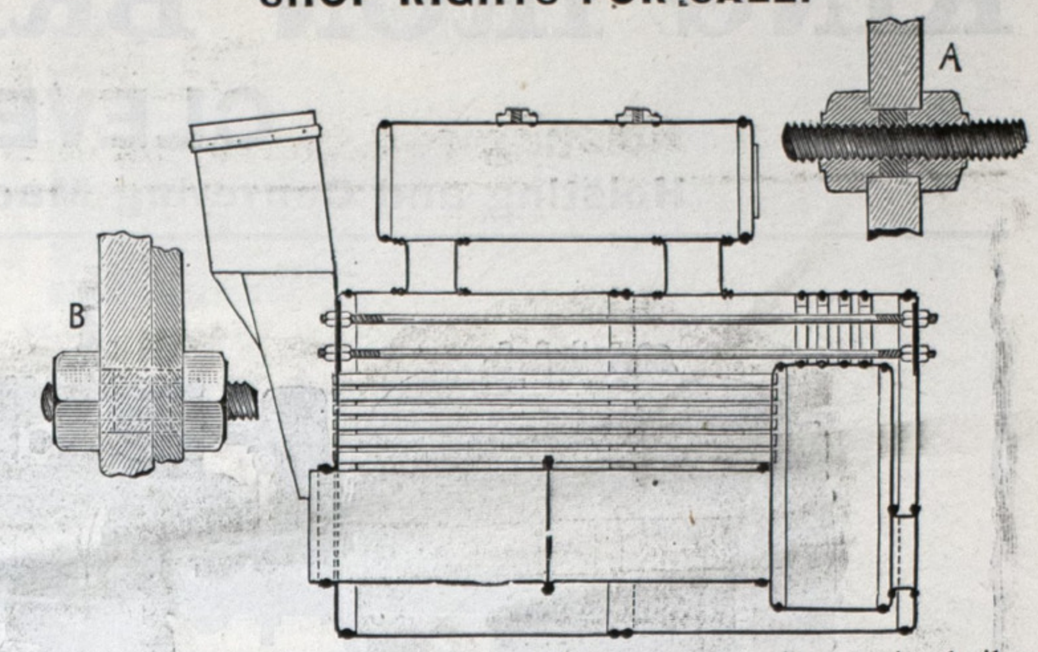
Manufactured by

CRAWLEY & JOHNSTON.

CORRESPONDENCE SOLICITED. **CINCINNATI, OHIO.**

THE SCHAFER STAY BAR.

SHOP RIGHTS FOR SALE.

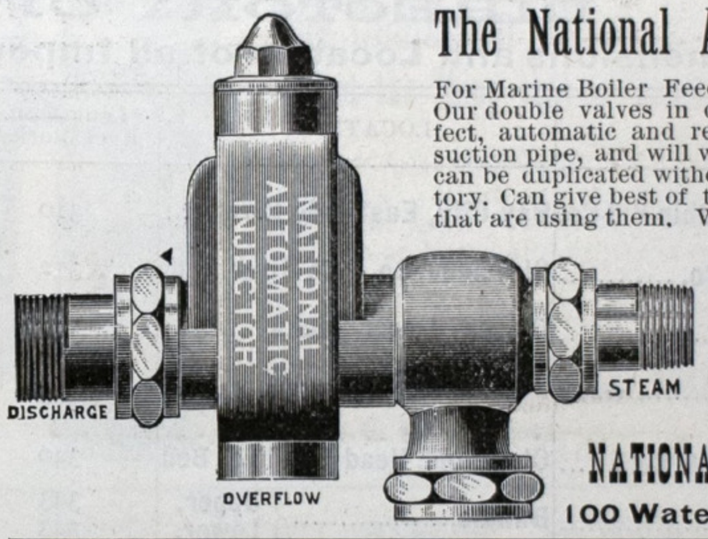


The best, the cheapest, and the only means of staying marine boilers. This stay gives free expansion. We use no putty or cement of any kind. The strength of the stays is not reduced by heaving them up with long wrenches and rope falls, but we guarantee that one man with a wrench not to exceed three feet in length will make the joint absolutely tight. This device can be applied to boilers now in use with but very little expense. Get estimates from

D. CONNELLY & CO.,

27 Center Street, CLEVELAND, OHIO.

The National Automatic Injector.



For Marine Boiler Feed it is superior to any other. Our double valves in overflow makes it most perfect, automatic and reliable ; will lift with hot suction pipe, and will work water 140 hot. All parts can be duplicated without sending Injector to factory. Can give best of testimonials from engineers that are using them. Will send Injector to any reliable party on a guarantee. Give the National a trial, then decide for yourself if you want it or not. We also make the National Ejector. Send for Descriptive Price List. ☞ Agents wanted in every locality. Prices always the lowest.

NATIONAL BRASS MAN'F'G CO.

100 Water St., CLEVELAND, O.

ERIE RUBBER CO.,

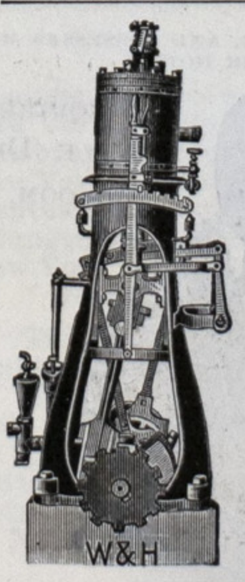
ERIE, PA.,

—MANUFACTURERS OF THE—

KEYSTONE MARINE VALVE.

These RED, AIR AND FOOT VALVES, are the Best Rubber Valves made.

J. D. WILSON. M. HENDRIE.



Montague Iron Works,

MONTAGUE, MICH.

WILSON & HENDRIE, Proprietors.

MANUFACTURERS OF

Marine Engines and Boilers,

AND GENERAL MILL MACHINERY.

HENRY B. BURGER. GEORGE B. BURGER.

H. B. & G. B. BURGER,

MANITOWOC, WIS.

Ship Builders and Contractors.

Dock will admit vessels of 1200 tons and boxes will lift 350 ton vessels. Yard is fitted with a large spar derrick, and a stock of spars always on hand.

For dimensions of Dry Dock, see page 13.